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ABSTRACT

The paper addresses the educational needs of severely handicapped students with emphasis on the redirecting and redesigning of current thinking, curriculum structure, and teaching methods so that students develop functional skills. Stressed are the need to reconsider the definition of the severely handicapped, the purpose of their education, and the needed emphasis on functional education. Noted is the need for curriculum to be structured around the selection of critical skills, taught on a functional basis, and based on the domains of residential and vocational skills. Teaching methods which should be changed are also considered, including the structuring of instruction, modification of performance criteria used, lessening of the emphasis on discrete trial format, and adoption of practices (such as using age appropriate curriculum and materials) that have been identified as being present in "good" programs. (Author/DB)

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Redirecting and Redesigning the Curriculum to Meet the Needs of the Severely and Multiply Handicapped

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Running Head: Curriculum

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Abstract

Progress in the education of the severely handicapped has been notable since the requirement was established by the Federal Government. However, a large percentage of the severely handicapped population is still exiting our schools without a limited number of the skills necessary to function in society. The redirecting and designing of current thinking, curriculum structure and teaching methods is necessary if we are going to graduate students with functional skills. Authors and researchers in the field have developed a number of viable alternates to specific practices that exist today. Those, combined with a common sense view of the needs and the means to meet those needs have led to a set of proposed necessary changes which can be accomplished by individual classroom teachers and/or total programs that are responsible for the education of the severely handicapped. Which, if implemented will result in more effective educational practices and severely handicapped individuals better prepared to meet their potential as adults.

Redirecting and Redesigning the Curriculum to Meet the Needs of the Severely and Multiply Handicapped

The mandate to educate the severely handicapped in this nation is less than a decade old. Great progress has been made in the quest of an 'appropriate education' for the more than one hundred thousand severely handicapped persons of school age in this country. During this period a large number of materials and assessment instruments have been modified or developed for use with this population. A variety of technology and several approaches for teaching the severely handicapped have been shown to be effective. Over a half dozen text books concerned with severely handicapped have been published to aide in systematically training personnel to be effective teachers. In other words, we have developed, in a relatively short period of time, an extensive body of knowledge concerning the provision of educational experiences to the severely handicapped.

Yet, still many of those severely handicapped individuals who are exiting our schools are woefully unprepared to exist in society at a meaningful level of independence and self sufficiency. It is, and has been, exceedingly easy to blame our society or government for not providing the commitment to these adults and therefore not allowing them to be successful citizens. We, in the profession,

have also been happy to point out that we have not had long enough to teach these individuals to make changes in their outcome. Each of these arguments have merit. However, we have over used these excuses. Time has nearly run out for us to prove that we can actually affect changes in our students through training on a cost effective basis. The field of learning disabilities is already faced with the treat of loss of direct federal support. We in the field of education of the severely handicapped must realize that at the outside we have less than ten years to begin to graduate citizens who will require less social services and can be productive to an extent that would not have occurred without our interventions. Today we are still a long way from our goal. The reasons for this disparity are not the ones listed above but based on what we teach and how we teach it. We must change the curriculum and the teaching methodology which we employ with the severely handicapped and to accomplish this end we must realign our outlooks and goals for the population.

The remainder of this discussion will focus on changirg goals, curriculum content and teaching methodologies. These changes will provide an overview for educators to develop an effective structure to educate the severely handicapped student.

Redirecting Outlooks and Goals

There are four areas of major importance in the education of the severely handicapped that we as professionals must adjust, add to or modify our thinking. These include the following areas: change in accepted definition, realignment of our purposes, modification of the emphasis of curriculum, and recognition of what can be learned.

Changing the Accepted Definition

There are numerous definitions of what it is to be severely handicapped in this nation. These definitions vary from state to state and from organization to organization. Without examining each definition, it is possible to point out a number of general weaknesses of presently accepted definitions. These would include: definition by exclusion, application to specific conditions only, failure to reflect the functioning level of an individual, inclusion-criterion are based upon administrative not behavioral considerations, and finally, no basis for exiting the classification is provided by the majority of these definitions.

The existing definitions often limit our range interventions and the age at which these interventions can commence. Baker (1979) has, however, developed a definition that addresses the problems found with other definitions. That definition is as follows:

> The 'severely handicapped' individual is one whose ability ro provide for his or her own basic life-sustaining and safety needs is so limited, relative to the proficiency expected on the basis of chronological age, that it could pose a serious threat to his or her survival.

This definition allows for early intervention and indicates that such interventions should be based upon life-sustaining skills and safety needs on an age appropriate level. Further, if we would shift our outlook to accept this definition even just on a classroom basis, the proposed changes of curriculum and teaching approaches could follow more naturally.

Realignment of Our Purposes

The purpose of special education for a number of years has been to aid the individual to better reach the mainstream of our society. It has been pointed out that educators fictitiously felt that the severely handicapped would 'graduate' into programs for the moderately handicapped after effective intervention (Sailor, Wilcox and Brown, 1980). Too often the inner belief that if we can modify behavior or teach communication or toilet training to an individual that person will move up and onward to being moderately or even mildly handicapped. This stand is ill supported. We in special education of the severely handicapped are not and probably

We must realign our thinking about the role of the educator when dealing with severely handicapped persons. That role or purpose is to insure that a maximum of skills, which will lead to independent or semi-independent functioning, are learned. These are not the traditional curriculum components.

Modification of the Traditional Emphasis of Curriculum

The curriculum of special education has been drawn from two primary sources. First, is from the curriculum of the non-handicapped. This curriculum has limited functional content and emphasis. It contains experiences which are academic (college preparatory) in orientation. Special education only modified this approach making it remedial in nature, i.e., maintainence of the academic orientation only simplified. This same emphasis has remained, in part, present in current severely handicapped curriculum and teaching approaches.

The second, is the use of development scales to provide the components of the curriculum. This source of curriculum for the severely handicapped has often led to the teaching of skills which will not enable severely handicapped individuals to better interact with their present or future environments and skills which are non-age appropriate (Guess and Noonan, 1982).

The use of either or both of these methods of developing curriculum does not lead to emphasis upon functional skills.

Figure 1 graphically displays the extent to which functional skills are currently included in curriculum for the severely handicapped.

Insert Figure 1 About Here

Figure 1 represents a gradual increase in emphasis on functional and vocational skills as an individual approaches exit from school settings. This current curriculum based on non-functional skills does not provide the severely handicapped individual with enough training to adequately function in society after exiting school.

Figure 2 provides a graphic model for an emphasis on functional curriculum.

Insert Figure 2 About Here

This proposed model provides for an emphasis on functional skills from the day the student is identified as severely handicapped. The inclusion of non-functional skills, i.e., academics would occur only after those skills identified as critical were learned.

Recognizing What Can Be Learned

There is little debate that severely handicapped individuals learn, under normal conditions, at a reduced rate, reach fluency of skills slower, and generalize those skills poorer than the non-handicapped or even the moderately handicapped. This

acknowledgement must be realized by classroom teachers in the manner of selection of critical and functional skills. Not only must teachers develop goals and objectives on this basis but teachers must choose the most critical skills and teach those first.

This selection has been discussed by Bellamy and Wilcox (1980) and is referred to as opportunity cost. The concept revolves around the fact that when an educator selects one skill to be taught, other skills must be sacrificed. In other words, skills to be taught must be selected on an extremely careful basis.

Redesigning the Curriculum

If the educator does modify or realign his/her outlook and/or goals those changes should in turn indicate needed changes in the curriculum for the severely handicapped. The problem with curriculum revolves around the fact that although we develop individual programs for the severely handicapped, we arrive at the skills to be taught from existing assessment instruments and/or commercially prepared curriculum. Both of which are not individualized. In other words we teach what we can assess rather than assessing what we need to teach. The latter form of assessment can be best accomplished through the use of criterion referenced assessments designed by the classroom teacher specifically for the severely handicapped individual. The skills assessed would then reflect the critical skills identified by the process discussed below.

A number of rather complete discussions of the use of criterion referenced tests are available (see Popham, 1978 and Kazalunas, 1977). Further, the validity of criterion referenced assessment is accepted both in practice by the use of commercially prepared tests and in the literature (Singa, 1974).

Beyond the fact that we are selecting skills from previously established, non-individualized materials, is the fact that we are not using functional domains to structure curriculum for the severely handicapped. In actuality there are two domains which are functional. These two are the employment domain and the residential domain. All functional skills fall under one or both of these two domains. This fact is of utmost importance in selecting critical skills that should be taught.

Selecting Critical Skills

Critical skills are those skills which are of critical importance to the individual when they leave the educational system. These skills are relatively easy to define by a four step process. This process is enumerated below:

1. Identifying skills necessary to survive in the community. The need to identify services and skills required for entry in the community in which the student is likely to reside after exiting school is a top priority. This concept referred to as 'community referencing' (Bellamy and Wilcox, 1980) includes the evaluation of

possible employment, residential and other sites, available within the community. This should be an ongoing evaluation; as services change so would the skills required for entry. For example, if the bus services in the area drop mini-bus services for the handicapped and only provide handicapped equipped full sized buses the transportation skills required may change dramatically during one school year.

2. Determine the level the individual will ultimately function in. This idea has grown from a concept termed the Criterion of Ultimate Functioning (Brown, Nretupski, and Hamre-Nretupski, 1976). However, in determining curriculum directions teachers must identify what level the student is most apt to be placed in when he exits the school setting. This is a best guess process which is modified at least as often as the students' individual education program is reviewed. From the 'most likely' vocational and residential setting a set of critical skills for each setting can be prepared.

3. Examine the skills required to function in present settings. At least two areas should be examined to determine presently required skills. These areas are the school setting and the home environment. These can be ascertained by questioning parents and professionals who have direct contact with severely handicapped individuals. From this questioning process a list of important skills for present successful functioning may be listed.

4. Establish the skills necessary to function in the next environment. These skills again may be established by questioning the personnel responsible for training and supervision in the next setting (Brown, et al, 1976). In the case of an older adolescent the next environment may simply be some level of placement within the community's service system. In that case the process would simply be the accomplishment of number one and two above. This area becomes a plan for transition to the next setting. This four step process can be completed by either direct observation of settings and/or by a questioning of staff of the identified settings. One method, that has proven effective, is the structuring of the observation and/or questioning process to focus on entry criterion skills. These criterion are often not formalized as written rules, however, they can be identified.

Prioritizing Critical Skills

After critical skills have been identified it is important to prioritize those skills. This priority should be established on the basis of skills found in the largest number of settings (Guess, and Noonan, 1982). An example of this might be that of toileting. Toileting may be a critical skill in all settings whereas ability to complete an assigned task may only be important for the vocational and school setting. In this case toileting would be ranked above task completion. This ranking

process can take place for each skill. It is helpful for the teacher when identifying critical skills to ask parents and professionals to list skills in order of priority for each site thereby aiding in the prioritizing of skills for teaching.

The prioritization of critical skills becomes more and more important the fewer years in school the severely handicapped individual has left (White, 1980). A teacher must realize that if an older adolescent has not reached criteria on a number of critical skills, that it well may be that that student will not acquire all the critical skills identified. The older an individual the more prioritization of skills becomes critical.

One method of determining the number of critical skills that will be learned by an adolescent is to look at Individual Educational Plans for a number of previous years and determining the average number of long and short term goals that have been met per year. This method will provide the educator with an approximation of how many critical skills can be attained by a severely handicapped student prior to graduation.

Determining Functionality

Another method of modifying the curriculum is to select skills which are functional (Brown et al, 1976). In other words, skills which have application to the individual in the 'real world' environment in which the student is and will be in. Each critical

skill and the objectives which in turn are established should be evaluated to insure they are written in a functional manner. Further, if a teacher is using an assessment or curriculum which has been prepared by a commercial publisher the following set of questions should be posed concerning the functionality of the skills addressed.

1. Is the skill necessary for future functioning of the individual? It is important that the skill being taught will be useful after exiting the school setting. An example of a possible non-functional skill often taught in school settings is raising your hand to request to use the restroom. This generally is a skill only required in school settings. It is, however, important to examine the skills necessary to function in settings which the student most probably will be in after leaving school. It may be that this skill is useful because the sheltered work setting in the community may demand just such a skill.

2. Are there other skills that could be taught which would bring the child to established levels of functioning more rapidly? We have and do often teach skills which we feel are prerequisites to other skills. The use of developmental based assessments and/or curriculum often leads to the teaching of non-functional skills. This approach often wastes time which could be put to use learning functional skills. An example of this problem is found in the

teaching of matching of the colors red and green found on square pieces of paper with the ultimate goal of the student being able to identify when he/she should not cross the street. There is no reason that that goal cannot be reached by teaching street crossing rather than by spending time on what appears to be a prerequisite skill.

3. Are the materials used similar, or the same as, those required in adult settings? We often select materials to teach skills which are unlike those encountered in the work or living setting. An example of this is the use of bicycle brake or gear assemblies to teach vocational skills. Unless a sheltered workshop or day activity center has contracts for those or similar assemblies they are of questionable functional value. It may be argued that these activities teach on-task behaviors. However, such behavior can be taught by employing functional materials and skills.

4. Are the criterion for success fimilar, or the same as, required in the settings the student will most likely be in after school? We write criterion for success that do not reflect the 'real world' requirements. Few jobs for the non-handicapped, let alone the handicapped, require one hundred percent accuracy for repetitive tasks. However, school do. The educator should develop criterion based on what is expected in the adult setting

for other severely handicapped or do work samples with several non-handicapped (or less handicapped) age equivelant students to set rates or percentage of correct criterion.

5. Will the skill, at the end of acquisition, be chronologically age appropriate? For a skill to be useful it must be appropriate for the student, not when teaching is started, but when the skill is learned. We too often teach severely handicapped children to ride a tricycle much like non-handicapped children. If this skill is not learned we repeat the goal for a number of years. If acquisition of tricycle riding is going to take place much after age eight or nine it is inappropriate to teach. The reasons for needing to ride can be met by learning to ride a bicycle initially with training wheels and ultimately without. Bicycle riding is an age appropriate skill even for adults and possesses functional value in self transportation.

By using the five questions listed above the teacher is able to evaluate skill on the basis of functionality. In turn by using this same line of thinking Individual Education Programs can be developed with a functional orientation thereby leading to the teaching of functional skills.

Changing Teaching Approaches

To facilitate the proposed changes in the curriculum for the severely handicapped a number of changes in current teaching

practices are required. The successful implementation of a curriculum organized around critical skills and based on functionality relies on modification of the current reliance on discrete trial format, lowering many of the criterion we select for success to enable generalization programs to begin earlier, changing how we structure instruction, and adopting the components that have been identified as essential for effective classrooms.

Modification of the Emphasis Upon Discrete Trial Format

Discrete trial format, drawn from the behavioral approach, has been accepted as 'the way' to teach the severely handicapped. It often involves the teacher sitting at a table presenting stimuli to the student who then responds and in turn is reinforced for the correct response. By repeating this interaction a number of times at each setting skill acquisition is gained. Although this is an effective manner to insure the acquisition of some skills it is often used for unwarranted and prolonged periods of time. This method of instruction requires extensive periods of time to teach individual skills. And further, the discrete trial format provides difficulty in the teaching of many functional skills. Critical and functional skills seldom occur in repetition but are more often sets of subskills making up a behavioral chain, i.e, bus riding or toileting.

Neil (1981) suggests that many functional skills should be taught by a method referred to as routine training. This method involves teaching skills where they naturally occur, when they naturally occur and evaluating their acquisition on the level of assistance used by the teacher. In this approach a series of critical skills are trained as routines, rather than as discrete subskills which are latter trained. Routine training has merit as an approach for the teaching of severely handicapped individuals. Discrete trial format should then be used to train subskills of routines which the individual is not showing progress in acquiring.

Changing the Criterion Used

Many educators have and do select relatively high criterion for success of their students. The range in the majority of cases is from 70% to 100% correct. This criterion in turn must be met by the student for a number of days. Many teachers select the criterion level and the number of days on an arbitrary basis.

Establishment of a criterion should be in many cases based upon the lowest criterion above the chance level. By doing this the teacher is able to get onto generalization activities more rapidly. In many activities including speech the ability to perform the activity even once, as long as chance can be ruled out, may be sufficient. Each sill should be analyzed by asking three questions. First, what is the level that will demonstrate

acquisition of a skill? Second, what is the level of proficiency required in the natural environment for the severely handicapped? And third, what is the speed or accuracy of chronological age equivalent non-handicapped or less handicapped student?

Accomplishing the end of using lower and more appropriate criterion for acquisition and maintainence of skills will lessen noncompliance caused by boredom. Beyond this it will enable the teacher to move on to the generalization of that skill to other settings, other people, other stimulus, etc.

Changing How We Structure Instruction

Teachers tend to structure instruction as if they were involved in a scientific study and all variables had to be controlled. In so doing we find individuals who only can perform a behavior in school and/or only for the teacher. Often these same students can only accomplish a task when given a structured common, i.e., put the spoon on the tray and will consistantly perform this behavior when reinforced for the behavior by edibles. This approach does not lead to the generalized use of the skill even after extensive amounts of teaching time has been expended.

It has been proposed and demonstrated that when a teacher loosens the structure in a systematic way during the acquisition stage that skills are more apt to generalize (Hupp and Mervis, 1981; Hurdert, 1981). This approach involves the varing of

interaction on the teachers' part while still requiring completion of an established program. This may be done, among other ways, by having other adults run the program by varing the structure of the command and teaching in different settings. Although acquisition is slower under such an approach the recall and generalization of the skill appears to require less teaching time than using the conventional approach.

Adapting the Characteristics of "Good" Programs

It has been established that there are characteristics that good programs for the severely handicapped possess (Bates, Renzaglea and Wehmen, 1981; Bellamy and Wilcox, 1980). Good programs include the following components.

1. Age appropriate curriculum and materials. Materials and curriculum must be selected using the bench mark of what would be appropriate for peers. This should include the school and extra curricular activities.

2. Integrated experiences. The school experiences should include interactions with non-handicapped peers whenever possible. Further, the program should require interactions of the severely handicapped with community settings and adults in the community.

3. Community referenced and functional in orientation. The curriculum, as noted, should reflect the demands of the local community and the requirements of adult functioning. Skills should

have immediate and/or future usefullness. The use of materials found in the natural or adult setting should be used with limited simulation.

4. Non-catagorical in placement. Placement of students should be accomplished on the basis of functioning level not type of handicapping condition.

5. Future oriented. The materials used and skills required should be, in a great part, selected from future environments that the student will be exposed to. Beyond this, plans for transition into the next environment should effect the structure of the curriculum for severely handicapped individuals.

6. Parental involvement. The teaching of many functional skills can best be accomplished in the home. Further, for generalization, programs should naturally involve the parents. The parents should also be involved in the development of a critical skills list and ultimately the educational plans.

7. Data collection and charting. The performance of severely handicapped students needs to be monitored on a daily basis and progress evaluated at least on a weekly basis. Data collection should take place prior and during instruction. It should be used to provide a basis to make changes in the instructional method or the program if no progress is apparent.

8. Periodic review of the Individual Education Program. The review of what is being taught often is necessary more often than yearly and in fact may be more appropriately done on a three month or less basis.

9. Instruction outside of the classroom. Clearly, to teach functional skills the teaching to a significant extent must take place outside of the classroom. Further, specialists who provide services to severely handicapped students should be involved in both in and out of the classroom basis. These specialists should not be allowed to teach in their office but integrated into classroom and community settings.

10. Instruction in small groups. From both an efficiency and a functional standpoint it is critical that some small group instruction takes place daily. For example, social skills cannot be taught in isolation. Individual objectives should be written for each student involved in small group instruction and data should be taken to evaluate performance of individuals.

11. Use of environmental cues in teaching. Natural environmental cues should be used in instruction. The use of systematic preparation will lead to a greater range of independent functioning by an individual while minimizing errors. A plan should be developed by the teacher to use the least intrusive cue.

12. Schedule activities. The structure and schedule for instruction should be established with objectives, materials, times, and responsibilities clearly spelled out.

By implementing these components into classrooms and programs for the severely handicapped students, more learning will take place, time will be effectively employed and student improvement will be the outcome.

Summary

This discussion has summarized some of the changes that are necessary in curriculum approaches and in teaching methods if the field of special education is to prepare the severely handicapped to be productive and semi-self sufficient individuals. The period of time to prove that education can, on a cost effective basis, lessen the 'burden' that the severely handicapped place upon social services systems has almost passed. Efficient and effective practices must be employed.

Discussed were the need to redirect our thinking in the areas of definition, purpose of education and the emphasis for education of the severely handicapped. It was suggested that the method in which we structure curriculum for the severely handicapped should be modified. That is, the selection of critical skills, taught in a functional basis and based on the domains of residential and vocational skills. Finally, it was noted that a number of

currently accepted teaching approaches need to be changed. These included changing how we structure instruction, modifying criterion used, lessening the emphasis on discrete trial format and adopting the practices that have been identified as being present in 'good' programs.

We as a profession can identify what needs to be changed in the education of the severely handicapped. The next few years will prove whether we can accomplish this end. If not, students will continue to exit our programs not prepared to meet their potential.

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FIGURE 1

PRESENT CURRICULUM CONTENT
for
EDUCATION OF THE SEVERELY HANDICAPPED

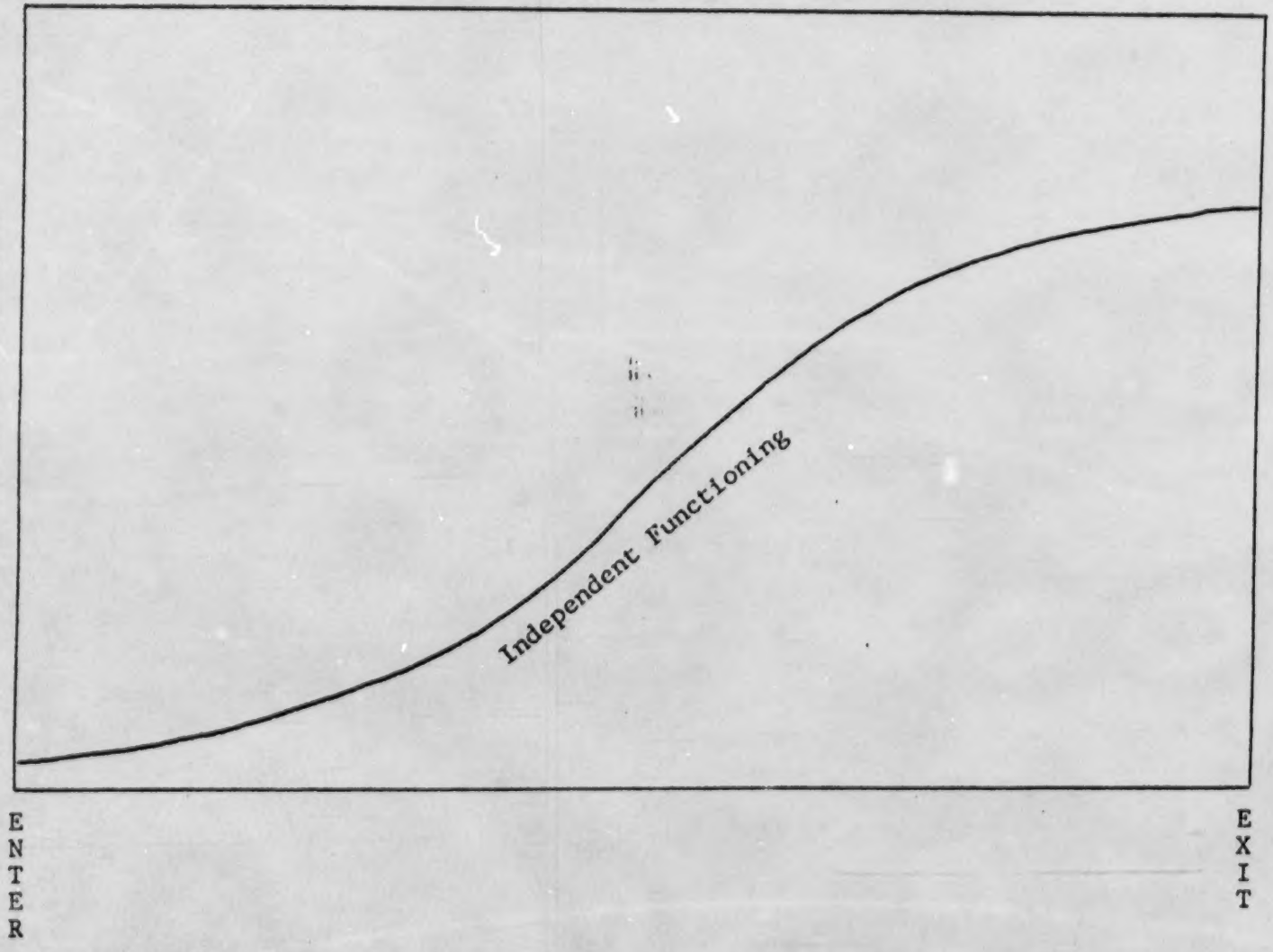

FIGURE 2

PROPOSED CURRICULUM CONTENT
for
EDUCATION OF THE SEVERELY HANDICAPPED